Klasifikasi Abnormalitas Sel Darah Merah untuk Deteksi Dini Myeloproliferative Syndrome berbasis Neural Network

Classification of Red Blood Cell Abnormality for Early Detection of Myeloproliferative Syndrome based on Neural Network

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ABSTRACT

Polycythemia Vera (PV) is one of the categories of Myeloproliferative Neoplasms Syndrome which is characterized by an increase in the number of red blood cells (erythrocytosis) as well as an increase in hemoglobin levels that are greater than normal limits, so this can affect the morphology of red blood cells. In this study, red blood cells were classified into 5 classes based on their shape, namely ellyptocytes, ovalocytes, schistocytes, tear dops, and normal using several digital image processing techniques and a backpropagation neural network system with 20 parameters which were the result of a combination of features, namely morphology, texture , and geometric invariant moments. The highest training accuracy rate is 93.94% and the highest test accuracy rate is 88% at a learning rate of 0.6 with a total data amount of 390 data.

Keywords : Myeloproliferative Syndrome, Polycythemia Vera, red blood cell, image processing, backpropagation